

## Variable resistive element with polymer-film force-sensing resistor

Patent Number: DE19606408  
Publication date: 1997-08-28  
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Requested Patent:  DE19606408  
Application Number: DE19961006408 19960221  
Priority Number(s): DE19961006408 19960221  
IPC Classification: H01C10/10  
EC Classification: H01C10/10  
Equivalents:

### Abstract

The element has a circular cylindrical housing (2) with a baseplate (3) and a bearing (4) for a rotary shaft (6) having an external thread (7) on to which a pressure disc (12) is screwed. The shaft passes through an elastically deformable body (11) around which the force-sensing resistor (8) has two polymer films with interdigitated electrodes. As the shaft is rotated the axial force exerted by the disc on the body is transmitted through the outer radial surface (25) to the resistor, producing a change in its resistance or voltage. Both the film and the body are insensitive to any moisture seeping into the housing.

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Fig. 1

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